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ABSTRACT

This occasional paper appraises the implications of occupational training families (OTF) for further education (FE) in Great Britain. In the early sections, the document sketches the background of OTFs and appraises the advantages and disadvantages of the concept. In so doing, four possible approaches to helping young people acquire flexibility, versatility, and the ability to learn are described: through general education, occupational grouping, occupationally based training, and basic skills. The paper identifies OTFs as a variant that groups jobs by 11 key purposes and concludes that in providing a broad-based youth training, OTFs have no particular merit. The report also discusses the usefulness of OTFs to job competence, progression, and skill ownership; the conclusion is that OTFs could be disadvantageous to skill development. The report describes the ways in which FE relates to OTFs. It is felt that in some cases there is little to be gained by using the OTF listings, but that there is some value in using the concepts related to training for skill ownership. The document is intended to place OTFs in perspective and to assist FE teachers and others in evaluating the usefulness of OTFs. (KC)

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An FEU Occasional Paper

OCCUPATIONAL TRAINING FAMILIES

Their implications for FE

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FURTHER EDUCATION UNIT

OCCUPATIONAL TRAINING FAMILIES

Their implications for FE

Ron Johnson

FURTHER EDUCATION UNIT FEU

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Dear Sir/Madam

OTFS: THEIR IMPLICATIONS FOR FE

Enclosed is an FEU Occasional Paper by Dr Ron Johnson, commissioned by the FEU, appraising the implications for FE of Occupational Training Families.

The FEU is aware of the concern of many in FE as to how they should relate to OTFs. There is some evidence to indicate that OTFs are not fully understood by many of those who are asked to use them, whether in the process of student selection, curriculum development or skill transfer. It is hoped that this document places OTFs in a wider context and thus enables tutors and trainers to appreciate that they represent "simply another contribution to the many attempts that are being made to provide for young people in an uncertain employment situation, a programme of education/training that is immediately occupationally relevant but is later transferable".

In the early sections of the document Ron Johnson sketches the background to OTFs and then goes on to appraise the advantages and disadvantages of the concept. In so doing he describes four possible approaches to helping young people to acquire flexibility, versatility and the ability to learn: through general education, occupational grouping, occupationally-based training and basic-skills. He identifies OTFs as a variant which groups jobs by key purposes and concludes that in providing a broad based youth training they have no particular merit.

He also discusses the usefulness of OTFs in contributing to "real job" competence, progression and skill ownership; and with respect to the latter he decides that OTFs could be disadvantageous. In the latter part of his report Ron Johnson describes the ways in which FE relates to YTS and thus to OTFs. He suggests that in some cases there is little to be gained by using the OTF listings but there is some value in using the concepts related to training for skill ownership.

At the time of writing there is no clear definition of MSC policy with respect to OTFs; their implementation is still in a state of development and there is obviously much work to be done before they can be easily assimilated and adopted by trainers and teachers. Whether or not they are adopted as official policy, it is hoped that this document will assist FE teachers and others in evaluating the usefulness of OTFs.

Yours faithfully

Jack Mansell

JACK MANSELL
Chief Officer

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Interviews and discussions varied from from twenty minutes to several hours and those interviewed included YTS Scheme Managers, Careers Officers, College Lecturers and other experts, but the views expressed in the report are my own.

Dr Ron Johnson
August 1984

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PREFACE

i) Attached is a report by Dr Ron Johnson, commissioned by the FEU, which appraises the implications of **Occupational Training Families** for FE. OTFs are, at the moment, associated with the MSC Youth Training Scheme; many schemes are classified in this way and various guides have been distributed by the MSC to assist the implementation of the principles of skill ownership related to OTFs.

ii) Ron Johnson, a past Director of Training for MSC and now a training consultant, gives a brief background to the development of OTFs and **Training for Skill Ownership** by the Institute of Manpower Studies. He then goes on to discuss the advantages and disadvantages of these concepts. He suggests that the OTF groupings are not necessarily based on any fundamental analysis and therefore there appears to be "no compelling reason" to group occupations into OTFs.

iii) Ron Johnson discusses the nature of skill transfer and flexibility, and identifies four basic approaches: through general education, occupational groups, occupationally based skills and basic-skills. He notes that the OTF approach is not concerned with producing a common curriculum for a group of jobs but is based on a totally different approach, i.e. the **key purpose** of a job or occupation. He questions the usefulness of this concept as an aid to tranfer within such a grouping; and suggests that movement across OTFs is "likely to be discouraged and inhibited by this notion".

He considers the concept of the IMS **Transfer Learning Objectives** as potentially useful, but queries its apparent restriction to OTFs, which have no special value in this context.

iv) Dr Johnson analyses the contribution of OTFs to progression beyond YTS. He suggests that it is important that the experiences and competencies obtained in YTS are described and assessed in ways that employers and educators can

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understand and use. he finds that the OTF scheme "undervalues the importance of agreed tests" and thus may not always contribute to progression. He is critical of the way some careers guidance material has misused the OTF concept.

v) The implications of OTFs for FE are then briefly analysed and discussed. Ron Johnson notes that (at the time of writing) the MSC has not adopted OTFs as a basis for YTS but has promoted the concept as worthy of further experiment and development. If colleges use OTFs then, because of the limitations in its classification system, for may jobs it will be necessary to use two or three **Work Learning Guides**. This, he says, will be a time consuming process but they can assist in giving an alternative perspective to subject matter. He describes the way in which colleges are involved in YTS; he suggests that any adoption of the OTF concept will be difficult to match with other approaches because of its lack of a common curriculum. However, the notions of skill ownership and transfer contained in the Guides should be useful especially if they are worked through with local employers.

vi) The FEU is appreciative of the appraisal provided by Ron Johnson. There is evidence that in some cases OTFs have been over-promoted and misunderstood. Many FE tutors (and others) feel threatened by what they see as a somewhat overwhelming "work-driven" package of broad-based vocational training, complete with transferability. This appraisal tends to put OTFs in a more acceptable perspective. As an occupational classification system OTFs are of limited use, and have no psychological basis. As such, they do not relate easily to a generic common-core approach.

vii) The appraisal also shows that whilst the ideas of **Transfer Learning Objectives** and **Skill Ownership** have a potentially valuable contribution to make with respect to skill transfer, OTFs as such have not, and could indeed be dysfunctional. The appraisal also indicates that the

Learning Guides associated with OTFs may well give some useful perspective to college subject matter, where colleges are involved in delivering YTS.

viii) Generally, therefore, FE would be advised to regard OTFs as simply another contribution to the many attempts that are being made to provide for young people, in an uncertain employment situation, a programme of education/training that is immediately occupationally relevant but is later transferable. As Ron Johnson has pointed out, the OTF approach is still being developed, and so its contribution to the problem above is not yet evaluated. Colleges therefore have no reason to feel overwhelmed by this concept but should take from it what they find useful, and thereby enrich their own strategies.

JACK MANSELL

IMS OCCUPATIONAL TRAINING FAMILIES

1. In 'Foundation Training Issues' [1], an IMS team explored various aspects of the emerging Youth Training Scheme and pointed up the need for more clarity and consensus on the learning objectives - among many other matters.

2. It was stated that there was growing support for training for young people which is not employer or job specific, but which contributes to raising the competence of the labour force and at the same time enables young people to cope with a hostile labour market.

3. It was against this background that the team at the IMS explored ways in which training programmes could be devised to meet these twin objectives. Their report 'Training for Skill Ownership' (TSO)[2], presents Occupational Training Families (OTFs) as an alternative to narrow training or disfunctional education.

4. In line with current thinking in this area, TSO emphasizes learning rather than teaching. The major theme which is elaborated in TSO is the importance of youngsters both (a) acquiring skills which can be used in other contexts (at work or elsewhere) and (b) being aware that they have these skills and feel able to employ them in different jobs and in other situations. The ability to 'redeploy learned skills and knowledge in new and unfamiliar circumstances' is referred to as **Ownership of skills**, and using methods of training which encourage this is called **Training for Skill Ownership**.

5. The OTF idea is dependent on the notion that each job has a **Key Purpose** (Appendix I) which encapsulates the overall aim of the work. Jobs concerned with Agriculture, for example, would have, as a key purpose 'nurturing and gathering living resources'. Jobs with a common key purpose can then be listed together and called an **Occupational Training Family**. In TSO, the key purpose is said to highlight a fundamental similarity between work within an OTF, and hence it can be used to make decisions about the OTF to which any particular job should be allocated. Under this scheme there are **eleven** OTFs (Appendix I).

6. The TSC report recognises that some jobs cannot readily be categorised by their key purpose. In effect some jobs can be regarded as having more than one of the key purposes listed, and hence they will fall within more than one Occupational Training Family. TSO (page 52) cites the case of a milkman, a job which might be categorised in 'Transport Services' or in 'Personal Services and Sales'. Similar arguments apply to jobs like Air cabin crewmember, Kitchen porter and Radiographer. Some jobs can 'belong' to as many as three OTFs, for example Hairdresser, Carpenter, Upholsterer.

7. There is no Occupational Training Family for the Engineering or for the Construction trades as such. Before a job in Construction can be allocated to an OTF, one must first decide whether it is concerned essentially with Craft and Design (OTF 3), with Installation, Maintenance and Repair (OTF 4), or with Manufacturing and Assembly (OTF 6). This explains why the Carpenter is in all three OTFs. It is stated (TSO para 3.7) that OTFs are NOT an attempt to classify jobs or occupations, and that the groups will NOT match existing job or occupational boundaries.

8. Given a key purpose, it is possible to devise a **Work Learning Guide** (WLG) for each OTF, and for each job within the OTF. The Work Learning Guide describes the activities and tasks which have to be performed to achieve the key purpose of the job. The TSO report avoids the use of the word 'tasks' in relation to Work Learning Guides by referring to the 'competencies' which the trainee must acquire in order to be able to do the job. The Work Learning Guides are produced in the form of 'entailment structures' which are intended to show how these competencies inter-relate. Thus the competencies described in the WLGs are related to tasks within specific work contents.

9. The ability to perform these activities and tasks represents the **Learning Objectives** to be achieved in the training programme. The 'Key Competencies' indicated in the WLGs were identified in discussions with managers (TSO page 13). The Learning Objectives given in the WLGs do not include elements specific to the task or

employer, as the focus is on effective and appropriate performance rather than on skills.

10. By stating other key purposes, i.e. Personal Survival; Exercising Citizenship; Self Employment; Contributing to the Community; Continuing Education; Job Candidate; Pursuit of Leisure Activities; other **Learning Guides** have been devised. These can be used in any youth training programme, irrespective of the OTF or job(s) concerned.

11. In order to develop the idea of skills transfer, a further policy instrument is introduced called the **Transfer Learning Objective.** Each Learning Objective - a simple statement about some task that the trainee is able to do - has an associated Transfer Learning Objective, where the youngster demonstrates the ability to do a similar task in a different context, after finding out what knowledge is needed in the new situation.

12. Because jobs in the same OTF have a similar key purpose and hence Work Learning Guide, it is assumed that learning can be transferred more readily between two jobs in one OTF, than between two jobs which are in different OTFs. It is also said that the OTF groupings will highlight the similarities between work within an OTF and similarities of the competencies required in different types of work. Thus the OTF approach is intended to focus attention on the range of work options not previously apparent.

13. On the question of assessment of trainee performance, TSO (Section 6) favours a statement in each case that the youngster is able to perform the job or task under consideration to an acceptable standard. The emphasis is on criterion referenced assessment (CRA) as opposed to norm referenced assessment (NRA). The assessment can be related to each of the key competencies identified in the appropriate Work Learning Guide. These assessments can then be presented in profile form. In this context a profile describes a multi-dimensional method of presenting information about trainees and their performance achievements.

14. Similarly the assessment of the trainee's ability to transfer skills to other contexts is assessed in terms of whether the individual can use the skills to perform the new task to a satisfactory standard. Levels of help required by the young person in tackling the new job are also taken into account. This assessment is related to the Transfer Learning Objectives.

15. The authors of TSO intend that the trainee talks through the WLG with the trainer so that the learning required for each aspect of the job is explored and the way in which the various tasks and competencies relate can be understood. These Learning Guides are also intended to be used as the basis of discussions between the trainee and the employer, and between the MSC and the Managing Agent responsible for a youth training programme.

16. In TSO the remit given to IMS team is said to be concerned with outcomes (TSO para 1.2-4), and not with the processes by which they are to be achieved. This emphasis is welcome in that it enables trainers to experiment with alternative ways of helping young people to acquire the desired competencies. In practice, however, the training methods employed are crucial to success.

17. The main report (TSO) has been supplemented with a series of 'User's Guides' [3], one for each OTF, which give an account of how the policy instruments can be applied to training programmmes which relate to jobs in the particular OTF.

18. The IMS team have also devised a micro-computer program entitled **Choice for Skill Ownership** (TSO paras 3A to 3A.17) which enables young people to explore the OTF concept, and to decide on which OTF to enter. Using a simplified version of the Work Learning Guides, the program allows the trainee either to explore which competencies relate to particular OTFs, or to record his or her preferences in competency terms and thus to find out how OTFs would rank on this basis.

19. The literature on OTFs is complex, and the reader will need to refer to the original literature for details on various aspects of the scheme, for example, assessment methods.

ADVANTAGES AND DISADVANTAGES

20. The advantages claimed for the OTFs are that they provide a framework and a structure for the design of youth training programmes which give managing agents and young people five key benefits. These benefits are summarised in TSO figure 2.2: the text is reproduced below.

FIVE KEY BENEFITS TO YOUNG PEOPLE AND EMPLOYERS

- More than job-specific competence
- Able to do a 'real job'
- Ownership of knowledge and skills
- Learning to 'find out'
- Progression

(TSO Figure 2.2)

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21. Few would argue with this agenda. The crucial question is to what extent the OTF concept assists or hinders the achievement of these objectives. It is worth considering these aims in more detail, together with the relevance of these ideas to careers guidance. It is also necessary to distinguish between the general thesis of TSO and the grouping of jobs into OTFs. Much of the analysis in TSO does not require these lists.

22. Thus, a further fundamental issue is considered first, namely whether there is a need to group occupations in this way at all.

Reasons for Grouping Occupations

23. Jobs and Occupations are no longer readily defined and relatively fixed entities. They have a tendency to be

transformed while you study them in today's fast-changing world. This complexity is superimposed on the existing problem of definition arising from the fact that people in similar occupations or with similar job titles often perform different roles according to the industry - and in some cases, according to the company - in which they work.

24. Occupations may be grouped for a number of different reasons, for example:

a) for studying labour markets;

b) for planning and allocating training opportunities in line with possible developments in the labour markets;

c) for showing young people that skills learned in one job can be used in another;

d) to economise in training by making the first part of the training common for occupations with closely related skills;

e) to delay a narrow choice on the part of a young person by making the first part of training common for a group of occupations.

25. Jobs can also be classified and grouped for job evaluation purposes. The OTF system is said to serve to highlight, for young people and others, the similarities and differences between the competencies required in different types of work. It is also said to be an advantage in terms of skills transfer between jobs.

26. Over the years a number of ways of classifying jobs and occupations for these various purposes have been devised, and on several occasions people have looked for one classification system which serves all or several purposes. However, a universal system is elusive, as methods which serves well for manpower planning may not work so well for careers guidance, and a system devised for training purposes may not work well for job evaluation. OTFs were not designed as the basis of a universal system, but some people tend to regard them as such.

27. OTFs were not designed for **studying labour markets** (paragraph 24a), and they are clearly unsuitable for this purpose as occupations can occur in two or three families. For the same reason OTFs are not a satisfactory basis for **planning training opportunities** (24b) in line with perceived trends in the local labour market.

28. On the Continent of Europe several countries have well-defined occupations, where the range of tasks to be undertaken by those who work in the occupations and the training which they require is described. At one time it was customery for many young people to choose an occupation when they reached school-leaving age, to be trained in that occupation up to the skilled worker level, and to expect to be employed in that kind of work until they retired. The same was true, although in a more limited range of occupations, in the United Kingdom.

29. Today we recognise that a young person who starts work in one kind of job may well have to move to a different job later. We must therefore consider how, in the initial training, we may help prepare young people to cope with such transitions. Grouping occupations together for initial training is believed by many people to contribute to this aim. Grouping achieves this because the trainee has an opportunity to recognise that some of the skills are common to the various jobs in the group. Thus, it is argued, the young person recognises that **a skill learned in one job can be used in another** (24c). The question of skills transfer and flexibility is discussed more fully below (paragraphs 37-48).

30. In TSO, it is suggested that the way a trainee can show that he or she can use a skill in another job is to try it. Provided this exposure is properly set up and monitored, it is a sound method. But it is not peculiar to OTFs. The problem with doing this within the OTF context is the supposition (referred to in paragraph 11) that the transfer will be easier if the new job is in the same OTF as the former job. A further problem is the absence of any method of articulating the level of performance in communicable terms.

31. The idea of encouraging a young person to try another job is a good one, and more research should be done to determine ways of doing this to best effect. The arguments in favour of grouping occupations for versatility is crucial, but not proven. In any case, a grouping based on similar tasks would probably be more effective than one based on a common key purpose. The value of common tasks or core skills is that the young person ends up with a repertoire of abilities that can be deployed in a variety of contexts. It is by no means clear from TSO what repertoire the trainee will have at the end. The OTF 'key competencies' are often highly job specific in practice, although they appear superficially similar at the generalised level given in the Work Learning Guides. (This is illustrated in paragraphs 57-59).

32. The notion of assessing the level of help the youngster requires in making this transfer is also interesting, but without some specification of what the skill is, and how it is used in each job, interpreting this 'level of help' concept is likely to prove difficult in practice. However, the special importance attached to skills transfer between jobs in the same OTF is of doubtful validity.

33. Grouping occupations to **economise in training** (24d), and thus to train more cost-effectively, is a well-known technique. Provided there is a substantial element of overlap in content, and that the trainees can be motivated by the examples presented and the approach used, this has value. However, since the OTF system is not based on commonality of content, it is not the best starting point for common programmes.

34. Grouping occupations for common training programmes **to delay career choices** (24e) - a major consideration in Sweden, for example - is fine in theory, but care must be taken not to deter young people from study by providing generalised courses which fail to motivate them. Although academically able young people can be motivated by courses which concentrate on general principles, many young people who are less able academically learn best when they are confronted with practical examples. Given enough examples and good tuition, the general principles

may be grasped.

35. In general, therefore, there appears to be no compelling reason to group occupations into OTFs. The advantages claimed for OTFs are examined in more detail in the following sections.

More Than Job Specific Competence

36. In recent years the need to prepare young people for an unstable employment situation has been widely recognised. It is commonplace nowadays to talk about training young people to be flexible and versatile and to use their initial education and training to lay a foundation for continued learning throughout life. It is important to consider briefly the nature of skills, learning and transfer[4].

37. The ability to **transfer skills** from one situation to another depends on a number of factors, in particular:

a) the **nature** of the skills and the ways in which they were acquired;

b) how the skills which the individual possesses **relate** to the new skills which are required;

c) to what extent an individual is **aware** of the relevance of the skills he or she possesses to the new situation;

d) the **opportunity** to apply the skills in a new situation;

e) the **incentive** the individual has to exercise the skills in the new context.

38. The **nature** of the skills refers to whether they are simple repetitive skills, or whether the skills can be exercised flexibly, for example. Research on versatility has shown that the **method of training** is crucial[5,6]. This is as true for interpersonal skills[7] as it is for operating a high speed sewing machine[8]. In the Training for Skill Ownership Users' Guides [9],

the training of a door to door salesperson to use a series of set phrases is contrasted with training such a person by developing product knowledge and inter-personal skills. The latter approach is said to be training for skill ownership, because the young person has acquired skills that can be used in other situations. This is true. Learning phrases does not lead to flexibility, but to rigidity in response. Training which imparts a framework of understanding how to interact with people helps to build versatility.

39. Methods of training for flexibility usually help the trainee to acquire a mental framework for dealing with the tasks, and this is a feature of the 'Discovery Method' in training[10]. In many ways it also underlies the 'learning to learn' approaches[11], which help the trainee to acquire a framework for understanding and selecting different learning strategies.

40. The extent to which skills which have been acquired can be retained is also important, and the factors which affect skill loss have been discussed fully by John Annett[12].

41. In terms of the **relationship** between the existing and the required skills, transfer occurs when the two skills have elements in common, or when they each depend upon a common capacity. Examples of common elements include keyboard skills which are required to use a typewriter and a computer or an ability to read music to play a piano or a trombone. The skill of looking up items in a dictionary or of filing documents each requires the use of the alphabet. Re-wiring an electric plug or adjusting a carburretter may each involve the skill of using a screwdriver. In order to make use of these skills the individual requires contextual knowledge and other skills, which underlies the concept of competence.

42. **Awareness** of the relevance of a skill to a new situation is much more difficult to deal with, as this is not always obvious. The way in which the Learning Guides are built up may help people to see more relationships between tasks of a similar kind. Using the same skill in a variety of situations should help young people to recognise relevant skills more readily.

43. If a checklist of common core skills is used to help trainees and trainers to recognise that a skill or a tool encountered in one situation has wider uses[5], this will assist trainees to transfer such skills. However, a course built up of common core skills could easily seem irrelevant and boring to young people, especially if the individual wants to do well in a particular job.

44. It is self-evident that the use of a skill in a new situation depends on the **opportunity** to do so. The recognition of this fact, however, has implications for the design of youth training progammes in that they should deliberately set out to provide opportunities for young people to utilize the same skill in different situations. The TSO report emphasises this.

45. The **incentive** to make use of the skill is a matter of attitude. Many young people shy away from trying their skills in new situations because they are afraid of not being successful. This highlights the need for confidence-building in youth training programmes. In particular there is a need to give young people a taste of success by affording them the opportunity to undertake tasks in a competent fashion.

46. Before a skill can be applied in a new situation it needs to be mastered. **Mastery of a skill** involves practice, with feedback on performance. Reflection on experiences is a valuable vehicle for learning, but there are many skills where the feedback for learning is through particular senses, e.g. the feel of a chisel as it moves though the wood, the visual judgement of the alignment of tiles or bricks, the sound of a well-tuned engine. Thus, in general, whereas knowledge can be relatively quickly acquired, mastery of a skill is a slower process. In compensation for this however, knowledge is forgotten much more quickly than skills. One may return to swimming or playing a musical instrument and perform reasonably well after many years - if the skill was there before. Most people, however, find that detailed knowledge which has not been used recently is more difficult to recall.

47. There is one over-riding consideration - **how to motivate the young people to learn** in the first place. Young people are highly motivated to learn where they can perceive value. For young people with a job, this means that they want to learn things that will help them to be more effective at work. Young people who are voluntarily taking courses leading to qualifications will be motivated to learn what will help them to achieve their goals. Even here, however, the lessons need to be interesting.

48. Thus in training terms, **helping young people to be versatile** involves:

a) content and methods that motivate young people to learn;

b) using appropriate learning strategies, e.g. practice with feedback to master a skill, together with appropriate methods for acquiring the requisite knowledge;

c) experiences which enable the young person to recognise that skills acquired in one situation can be applied elsewhere;

d) ensuring that the trainee acquires a repertoire of core skills;

e) fostering a readiness on the part of a trainee to be prepared to use skills in new situations, to learn new knowledge and to build on skills.

49. Broadly speaking, one can discern four distinct, but not exclusive, approaches to helping young people to acquire flexibility, versatility and the ability to learn. One method is to prolong general education and to ensure thereby a breadth of knowledge, skills and understanding on which subsequent learning can be built. One might call this the '<u>general education</u>' approach.

50. Another method is to take a group of occupations and to use these as a basis of a broader content for the programme at the

initial stages of vocational education and training. This could be termed the 'occupational group' approach.

51. A third approach is to base the initial training on an occupation and to build into the training a thorough understanding of the subject matter, and an appreciation of the jobs which are related to the one in question either because similar tasks and skills are involved, or because in ordinary working life people doing the one job have to interact with people doing the others. This could be termed the 'occupationally based' approach (see Appendix 2). It is of interest to note, in passing, that the typical training programme for a single occupation in West Germany is already soundly and broadly-based, though focussed around a particular set of skills. The skilled worker in Germany is versatile, and readily retrained for related work.

52. A fourth approach is based on the idea of basic-skills - identifying what these are and then either devising a course to impart them, or to use these as a checklist against another course (e.g. an occupationally based programme, or an occupational group programme), to ensure that they are covered. It is quite feasible to combine the occupationally based approach with the basic skills approach. This has the advantage that the motivation of the youngster is catered for - most youngsters want training related to an actual job or task - and at the same time the basic kitbag of skills for living and working are covered.

53. The definition basic skills has been elaborated helpfully in the FEU publication entitled 'Basic Skills' [5]. This document illustrates how the core skills approach can be used to help young people who have no clear vocational goals, and also how the repertoire of skills can be used as a checklist, and be covered within an occupational training programme.

54. The IMS Occupational Training Families apparently arose out of a desire to devise, in the Youth Training Scheme in Great Britain, training programmes which were broader that those required for single jobs, but narrower than training which was completely general in character. The assumption underlying this

approach is that training youngsters on this basis is better than training them in one occupation, as the OTF approach leads to more flexibility.

55. Other countries have attempted to tackled this problem by grouping together occupations where the **job contents** overlapped (e.g. administrative occupations, metal-working occupations). The normal approach would then be to analyse the knowledge and skills involved in a range of jobs, then in a range of occupations to look for common content. Such a pragmatic approach is readily appreciated by employers, trainers and trainees. The value of the training programmes is effectively self-evident. It is also the approach adopted in this country by the Engineering Industry Training Board when devising its basic training year.

56. The IMS team has taken a different approach, based on grouping jobs by **key purpose.** The idea is that because of the similarity of purpose, the range of tasks to be undertaken are similar, and hence transfer between jobs in the same family is easier. The TSO approach is **not concerned with producing a common curriculum for a group of jobs.**

57. It is important to recognise that the common basis of key competencies specified in a Work Learning Guide is at a very superficial level. The proposed programmes are not based on tasks, materials, tools or contexts which are common to jobs in the same OTF. Thus the extent to which these skills can be transferred across jobs in the same family varies enormously.

58. Take as an example, OTF 11, Transport Services. The list of jobs includes Air cabin crewmember, Ambulanceman, Bulldozer operator, Lift attendant, Motor cycle messenger and Merchant navy rating. These are all in OTF 11 as each job is said to have, as a key purpose, 'Moving goods and people'. Thus the Work Learning Guide for OTF 11 can be used. One of the key competencies is 'Drive safely and in accordance with the law'. The ability to drive an ambulance might well help an individual to learn how to drive a bulldozer. But how does this relate to an Air cabin crewmember or a Lift attendant. Another key competence give is

'Distribute load'. To an extent this is indeed common to all six, but how easy is it to transfer such skills across this range of jobs, and how relevant is it?

59. The assumption that training in one of these occupations somehow enables you to learn another more readily on the basis of the key purpose is scarcely credible. The problem is twofold. To what extent does the existence of a common key purpose for the jobs as a whole (e.g. the movement of goods and people), mean that particular tasks have very much in common? It might in some cases (e.g. driving an ambulance or a milk float) - but it might not in others (e.g. distributing load on a motor cycle, in a lift or on a ship. The key features for skills transfer are more likely to be concerned with the materials, the tools and the contexts within which the tasks are conducted.

60. The IMS Occupational Training Families are, therefore, not families of occupations with common training needs, but families of jobs which have in common a 'key purpose'. The basis of the grouping is therefore quite different to that adopted by other countries like Germany and Denmark, and the programmes derived from Work Learning Guides are effectively job specific and not generalised for the group as a whole.

61. Superficially the families look similar to pragmatic grouping based on content. Indeed it is not difficult to see that some of the families (e.g. Administrative, Clerical and Office Services) correspond to the traditional content-based groupings. In other cases, however, e.g. Personal Services and Sales, the content of the jobs listed is heterogeneous, and some jobs (e.g. Hairdresser, Painter/Decorator, Wigmaker, Air cabin crewmember) can be found in two or three families.

62. Some attempts at training for versatility seem to be based on the assumption that a brief encounter with a number of jobs is helpful. It must be pointed out, however, that having a variety of job experiences is NOT the path to versatility in skills terms, although it may help prepare young people, psychologically, to accept the need for change and to take opportunities that arise.

63. Training which is based on a closely related group of jobs (Appendix 2) can lead to versatility if the criterion mentioned above (paragraph 48) are taken into account. If young people are to be versatile at the end of their training attention must be paid to the processes used as well as the content of the programmes. Thus it is more important to ensure that young people learn to do a range of tasks really well, and that the basic skills are covered during that training than merely to move them from one job to another. Indeed, the TSO report recognises the need to structure work experience movements.

64. If a decision is made to provide a broad base in a youth training programme, the IMS Occupational Training Families have no particular merit. A system based pragmatically on related jobs from a content viewpoint would be preferable - as in other countries. Such a system would show a superficial resemblance to the IMS/OTFs, but there would also be some marked differences.

65. The IMS Work Learning Guides offer a way of broadening the perception of what a young person can learn in a given programme, and to that extent they are useful. To what extent the benefits of this analysis are commensurate with the time required is a matter of judgement in each case. There is, however, no need to use the OTFs for this, as the appropriate WLG or WLGs can be found from the key purposes without reference to the OTFs.

Ability to do a Real Job

66. The section in TSO on assessment is disappointing (TSO section 6). If the statement of job competence is to mean something to people other than those most closely involved in each case, a national system must be devised to specify in each occupation some of the key tasks and in broad terms what competent performance means in each case.

67. The TSO report does not really comes to grips with this. The discussion (TSO section 2.43 to 2.52 about 'education-led' and 'work-driven' is a web of half-truths and innuendos. The virtues

of learning on the job and of assessing performance during work activity are extolled and contrasted with other modes of learning and asessment. The driving test is quoted as an example of assessment whilst performing the task in the real situation, and moreover a task one 'learns by doing'. In fact, in a driving test individuals are required to demonstrate both skill and knowledge in an artificial situation where an examiner is looking over the shoulder and giving commands to stop suddenly or whatever, and asking how far a car travelling at forty miles an hour will proceed after the brakes are applied.

68. To pass a driving test one normally takes a course of instruction in the proper use of the car controls, and drives the car with feedback from the instructor on performance. Some feedback is readily detected by the trainee (where the car goes, for example), but for other feedback the instructor is essential, e.g. to remind the trainee to look in the mirror before a manouvre. Furthermore, in order to pass the test, there is a body of knowledge to be mastered - the Highway Code. One cannot memorise this by driving around a car. Thus in the example cited, the learning by doing is not enough, and the assessment is formalised and systematic. A sound training programmme does not slavishly utilize one method of learning, but makes appropriate use of a range of strategies.

69. To return to consideration of youth training programmes from this analogy, it is simply not good enough to leave it to the boss to say 'he has done this job properly', unless there is some agreed statement as to what 'this job' comprises. In setting such standards the content of the jobs will form the natural basis for recognising common elements. TSO recognises the value of an external assessor to apply standards whih would be independent of the workplace, but the use of the OTFs in this context is unlikely, in the event, to prove helpful because of the way the jobs are grouped.

70. The Work Learning Guides can be a useful way to approach the content of a job in terms of the activities and tasks to be performed and the skills and competencies required. However, since for many jobs more than one WLG will be needed, this could

prove a time-consuming way to approach the problem, and one of the other task analysis methods may prove preferable.

71. The overall conclusion is that in respect of 'ability to do a real job', the particular job listings into OTFs have little to offer. The TSO report is useful in that it reinforces the importance of broadly based competencies which can be acquired in the work situation.

Ownership of Knowledge and Skill

72. If a youngster has a 'skill', he or she owns it. The problem is that in some cases the training provided by an employer does no more than give the individual the ability to do the immediate task in hand. If the task is highly specific (e.g. specialised machinery peculiar to the firm), the skills acquired cannot be used elsewhere - in this sense the individual can't take the skills with him or her. The TSO report extends the idea to cover:

> - ability to **deploy competence** and to **find out what knowledge** is needed to perform effectively in unfamiliar circumstances in an unfamiliar job within the same family.

73. This assumes that the amount of **extra knowledge** required is not great, and that the **application of a 'skill'** derived from one job in the family to another job can readily be undertaken. The implication is that it may be difficult to use these skills in another job in a different family - a highly dubious assumption.

74. In real life the extra knowledge required is often voluminous, and the so-called 'skills' frequently do not transfer in the simple way described (see paragraphs 37 to 48)[4]. The important issue is not that there is something special about owning the skill, but that the kinds of skills imparted should be transferable, and that the young person should be aware of this.

75. What is needed to transfer skills from one job to another is discussed above (paragraphs 37-48), and in reports by John Annett[13] and by Keith Duncan and Chris Kelly[4]. In the transfer

of skills from one job to another, is it true to say that the importance of the overall key purpose is significant in terms of individual tasks? If the same tasks are performed in two jobs which are in different OTFs, is there some mystical difference between the way the tasks are done because the key purposes of the jobs differ?

76. If not, then the importance of the key purpose in skills transfer is diminished. At best these ideas are unproven as yet. The key purpose is not likely, in general, to affect the performance of the tasks, although it will obviously do so in some cases.

77. Movement across OTFs is likely to be discouraged and inhibited by this notion of the special importance of the family, whereas in practice such transfers are not difficult [12]. A study of the listings will suffice to show that there is nothing special about them in career movement terms[12], and therefore no particular virtue in following a programme within one OTF[13].

78. In other words the existence of these listings are potentially harmful, as they imply a diminution of the youngsters' choice. As discussed below (in the careers guidance section, paragraphs 89-94), these families were not chosen with regard to whether they were the ones within which young people might want to move, i.e. in terms of their interests and abilities.

Learning to Find Out

79. Great stress is laid in the OTF scheme on the need to encourage young people to find out what knowledge is needed to undertake a new job. The argument is that if the trainee has done a job in one OTF (and presumably is familiar with the Work Learning Guide), he or she should have the ability to ask the right questions when seeking to tackle a different job in the same OTF.

80. For some jobs this may work out. But for many jobs the sheer volume of new knowledge required should not be underestimated.

Finding out focusses on knowledge, but the key issue is whether the trainee has learned to learn and to use all the resources around him or her to undertake the job in hand, and has acquired the confidence to make his or her own opportunities.

81. The concept of Transfer Learning Objectives appears to be potentially useful, and it will be interesting to see how this works out in practice. There seems to be no good reason, however, to restrict this concept to transfers within the OTF, and hence the value of OTFs in this matter is doubtful.

Progression

82. Trainees who complete the YTS year require evidence of achievements and attainments to offer to prospective employers or to educational institutions where they wish to study. Even those who fail to complete the whole year will, hopefully, have completed some activities worth recording. Those young people who remain with the same employer would benefit from a written statement of what they have achieved.

83. In the OTF scheme, the emphasis is on statements about performance on the job. When applying for jobs where their experience, though relevant, may not appear so at first sight, the requirement is that young people can present their achievements and experiences to a prospective employer in an understandable way. In the last analysis it is the young person who should be aware of his or her competencies, and the employer who can judge whether these are relevant to the particular job in question.

84. Similar considerations apply to a young person who applies to go on a course. If the youngster does not have the usual qualifications, the course organisers need to assess his or her abilities. The key question here is, of course, whether, with due application to study, the young person has a reasonable chance of passing at the end.

85. Thus if the variety of experiences and competencies the

youngster has acquired are to be usable in job-hunting and obtaining places on courses, it is important to ensure that these experiences and competencies are described and assessed in ways that employers and educators can understand and use.

86. On the whole the current range of vocational education and training schemes are pragmatically based on the perceived needs of people in employment. They are based on real people doing real jobs. As with any system involving a lot of people there is a danger of getting out of date and ossified.

87. The need to extend assessment beyond the written examination has been recognised by many people in education and training, but reliable alternatives are not easy to come by. In the TSO report, little is said about how to assess for 'progression', and no framework is suggested to enhance the reliability and intelligibility of the statements about performance on the job.

88. The OTT s eme undervalues the importance of agreed tests, although in fact these could often be carried out within the context of normal work, merely by introducing simple checklists, and some method of ensuring that these are properly used. A YTS Certificate will be issued to every trainee who completes a significant part of the programme, and the endorsement of the Certificate in respect of the experience and attainments of each inividual should be in terms which another employer would understand.

Careers Guidance

89. Years of research into this field in the UK has led to the development of careers guidance based on young people's interests in terms of ideas, objects, people and facts, and relating this to jobs in terms of their key characteristics - outdoor, scientific, artistic, literature, social, sales, clerical and practical.

90. Such research forms the basis of modern career guidance material and methods, e.g. JIIG-CAL (see list of abbreviations

and key phrases). The IMS/OTFs appear to have been developed without reference to these concepts, and all that a computer analysis of the eleven OTFs can show is that they do not fit this scenario[14].

91. At first sight, the broad titles of the OTFs may seem to correspond approximately with the interest groups and characteristics mentioned in paragraph 89, but when a more detailed analysis is undertaken the disparities become more apparent.

92. A most disconcerting feature of the use of OTFs is the way the concept has been widely misunderstood, e.g. by the authors of the COIC material[15], and by the Institute of Careers Officers[14]. There is now literature likening the OTF concept to the German and Danish basic vocational training year, and talking in terms of 'training for a family of jobs' [14,15]. However, since training according to the OTF method is not based on a common content (as in Germany and Denmark), it is not comparable. The OTF system does not provide a sound basis for a training programme to embrace the range of jobs listed under the OTF in question.

93. It would be feasible to devise common training patterns, based on content for some of the OTFs, where the groupings permitted, but this would be of doubtful validity for, say OTF 11, Transport Services, as that includes sailors, milkmen, motor cycle messengers and airline hostesses.

94. It is of interest to note that these problems do not arise from the ideas about key purpose or from the Work Learning Guides, but from the compilations of jobs under the OTF headings. It is only when jobs are listed in these special family groupings that the OTFs can be used by the MSC to classify training programmmes, and by careers specialists to advise young people on which programmes to embark upon. If these lists were no longer used, and in particular if their use as a means of classifying YTS schemes was stopped, much of this misuse would also cease.

IMPLICATIONS FOR FURTHER EDUCATION

95. There are currently numerous initiatives aimed at changing the curricula of vocational and pre-vocational education and training programmes. Projects based on Occupational Training Families represent one such initiative.

96. The official position (at the time of writing - August 1984) appears to be that the Manpower Services Commission has NOT adopted OTFs as a basis for the YTS, but has promoted the concept as worthy of further experimentation and development. Many organisations are being encouraged to adopt the OTF approach as they design and refine their YTS programmes, and Colleges will need to respond. What difference will OTFs make to the curriculum for a particular programme?

97. The OTFs and WLGs are each derived from the notion of a 'key purpose' for each job, so that it is quite possible to make use of the WLGs independently of the OTF job lists. In essence the OTF listings are intended to indicate which Work Learning Guides are appropriate for a given job or group of jobs which is to be used as the basis of a programme. The listings also indicate other jobs with ostensibly a similar key purpose, and for which the same WLG will be used. This second piece of information should be used with caution, as the degree to which it makes sense to try to take into account several jobs in the same OTF (in drawing up a curriculum) varies enormously.

98. If a decision is taken that a youth training programme must be designed on the basis of the OTF scheme, it will be important to recognise that for many jobs it will be necessary to make use of two or three Work Learning Guides. There are other Learning Guides (on Personal Survival etc., see paragraph 10) which are common to all the OTFs.

99. College Lecturers will find that using these Learning Guides can help to give an alternative perspective to the subject matter to be covered, but it is a time-consuming process. The WLGs should theoretically form the basis for discussions between the various providers who contribute to the overall programme. The

authors of TSO advocate that they should also be used as the basis of discussion between a tutor employed by the Managing Agent and each individual trainee. In practice, all this consultation may well prove very difficult to achieve alongside the other work that will need to be done on job content to produce a sound programme.

100. Considerable information about the job(s) concerned, the knowledge, skills and understanding required to do them and the underlying theory will be needed to convert consideration of the WLGs into workable programmes. In practice this will often involve referring to existing syllabus material and to the frameworks being developed by organisations like the CGLI and the FEU concerning the basic skills and concepts that need to be covered in a coherent pattern of training.

101. There are likely, however, to be a number of jobs where this information about job content and competencies will not be readily available, and further research will be needed. It this is undertaken at the local level it will require considerable co-operation between companies and colleges.

102. Once the knowledge, skills and understandings to be acquired have been defined - and written down, the work of identifying (a) where these can best be learnt, (b) by what methods and (c) with the help of which people, can begin. At first we may well witness a great explosion of curricular design activity -if the resources can be found - but later the work of collation will, no doubt, occur with the formulation of appropriate modules. The basic skills checklist can then be used to ensure that these fundamental competencies are covered in the programme.

103. There are at least four ways in which Colleges of Further Education may become involved in discussions about Occupational Training Families in connection with the Youth Training Scheme -

i) where a Managing Agent requests a specific programme to be provided by the College within the context of one OTF;

ii) where the College offers a strong FE programme (e.g. CGLI

365) which effectively cuts across more than one OTF;

iii) where the College course covers a relatively narrow range of skills and it wishes to broaden this range;

iv) where the College provides essentially Social and Life Skills courses.

104. In each case the needs of the young person must be paramount, and discussions with Managing Agents should take this into account. In the main, Colleges will find that if lecturers take an interest in the jobs which form the basis of the programme, and seek to identify, with the staff at the Managing Agency, the key skills and knowledge involved and how these will be covered by the total education/training/work experience package, a constructive dialogue will result. The FEU publication 'Supporting YTS' provides helpful advice on this subject.

105. If this discussion is based on a Work Learning Guide for one group of jobs, and on the associated Learning Guides, the company knowledge of the job coupled with the College's knowledge of the underlying subject can be used to flesh out the framework into an integrated learning programme.

106. Where the College offers a broadly based course of further education to complement company YTS programmes, they can expect that when a Managing Agent studies the OTF literature questions will be asked about how the College course matches into this. There is no straightforward answer to this problem. It depends on the extent to which it is considered necessary for the off-the-job education to relate, on a day to day basis, with the on-the-job experience of the youngsters.

107. This depends, in part, on the pattern of attendance. This inter-relationship may be more critical on a day-release course than, say on a block release pattern. The academic ability of the trainees may also be significant. There are academically able young people who recognise the importance of a qualification, and who may not be concerned if the College course

is 'out of phase' with their work experience and on-the-job training. Less able trainees, however, are more likely to be demotivated if they cannot readily see the relevance of the course to their work.

108. There are a number of well-known techniques for strengthening the link between the off-the-job course and the work experiences of young people, notably project work which requires trainees to gather information about the workplace, its products, procedures, services and so forth.

109. For Colleges who wish to broaden the scope of one or more of their courses, there is little to be gained by using the OTF listings, but they may well find that some of the concepts related to training for skill ownership of value, and it may be useful to work through relevant Work Learning Guides with some local employers.

110. For Colleges who are offering essentially training in Life Skills (including Social Skills), the Learning Guides associated with the Training for Skill Ownership concepts should prove of interest and value. However, the current thrust is towards helping young people to develop 'Personal Effectiveness', which is seen as a life/work activity/attribute, and not as a classroom activity. Nevertheless, there are ways in which the off-the-job activities can contribute materially in helping young people to develop their personal effectiveness. We can therefore expect to see pressure brought to bear to find ways of putting the development of specific life skills into the broader context of personal development.

SUMMARY

111. Occupational Training Families consist of lists of jobs which are regarded as having a common key purpose (paragraphs 1-7). Using the concept of the key purpose, Work Learning Guides have been devised which indicate the key competencies needed to perform the job (paragraph 8). Based on other key purposes (e.g. Personal Survival), Learning Guides have been prepared which are not job-specific.

112. These and related concepts form the basis of a system for designing youth training programmes (paragraphs 10-19). The aim is to provide training and experience in skills which can be used in a range of jobs, and to help young people to recognise and capitalise on this versatility.

113. A number of advantages are claimed for the OTF scheme (paragraphs 20-22) but on closer examination (paragraphs 23-88) it is clear that these advantages are not dependent on the OTF listings, and indeed in some cases (e.g. occupational mobility and careers guidance - paragraphs 86-92), the OTF lists are potentially harmful.

114. If the Manpower Services Commission decides to promote OTFs vigorously, this could involve FE Colleges in a great deal of work, as there will be problems in using this approach alongside other current developments (e.g. in relation to basic skills - paragraphs 92-102).

115. In seeking to respond constructively to the OTF approach it is important to recognise two key facts, (a) the system does not represent a method of devising a curriculum common to a number of related jobs (paragraph 56), and (b) the Work Learning Guides can be used quite independently of the OTF lists. Appropriate WLGs can be identified from the key purpose(s) of the job under consideration. Often one job will have more than one key purpose, and hence more than one WLG will be needed.

ABBREVIATIONS AND KEY TERMS USED

CGLI — City and Guilds of London Institute

COIC — Careers and Occupational Information Centre - a section of the Manpower Services Commission that publishes books and other material for careers education and youth training.

Competence: 'Ability to perform a particular activity to a prescribed standard. The activity may involve the develpment of a variety of skills.' - See the MSC Glossary of Training Terms, 1981 Edition.

FE — Further Education

FEU — Further Education Unit

IMS — Institute of Manpower Studies

JIIG-CAL — Job Ideas and Information Generator-Computer Assisted Learning: a computer-based system for helping young people to identify the kinds of jobs which match their interests and abilities. The system is thoroughly researched and widely used.

Learning Guide: By postulating a key purpose, e.g. Personal Survival, it is possible to derive a set of ativities and tasks which which together achieve the purpose, and hence to describe the competencies needed by the individual concerned. A statement of these competencies, showing how they fit together to achieve the purpose, is called a Learning Guide. The method used to indicate links between the competencies is referred to as an 'entailment structure'. When the Learning Guide is derived from the key purpose of a job it is called a Work Learning Guide.

Learning Objectives: A statement of what the trainee is enabled to do through his learning.

MSC Manpower Services Commission

OTF Occupational Training Family: a list of jobs having the same key purpose.

Skill: 'An organised and co-ordinated pattern of mental and/or physical activity in relation to an object or person, event or display of information. Skills may be described as perceptual, motor, manual, intellectual, social, etc., according to the context or the most important aspect of the skill pattern.' - See MSC Glossary of Training Terms, 1981 Edition.

Skill Ownership: this describes the situation when the skills acquired through training and experience in one situation can be used in another situation, whether at work or outside employment.

Task: 'A major element of work or a combination of elements by mean of which a specific result is achieved.' - See MSC Glossary of Training Terms, 1981 Edition.

Training: 'A planned process to modify attitude, knowledge or skill behaviour through learning experience to achieve effective performance in an activity or range of activities. Its purpose, in the work situation, is to develop the abilities of the individual and to satisfy the current and future manpower needs of the organisation. The phrase "learning experience" emphasises that there is no clear diiding line between training and ducation, and the importance of integration.' - See MSC Glossary of Training Terms, 1981. Clearly the meaning of training is widened still further within the YTS.

TLO Transfer Learning Objective: a statement of what the trainee can achieve by using skills in another context. The level of help required by the trainee is also

assessed.

TSO — Training for Skill Ownership: the title of a report by the Institute of Manpower Studies, and a concept described in it. The concept is concerned with using methods of training that enable young people to use their skills in a variety of situations.

User's Guides: a series of eleven books, one for each UTF, produced by the Instutute of Manpower Services for Managing Agents, training organisations, Colleges of Further Education and others responsible for designing and implementing training within the Youth Training Scheme.

WLG — Work Learning Guide: see Learning Guide

YTS — Youth Training Scheme

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2. Training for Skill Ownership, a report to the Manpower Services Commission by Christopher Hayes, Nickie Fonda, Maureen Pope, Roger Stuart and Kathy Townsend, Institute of Manpower Studies, 1983.

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4. Task Analysis, Learning and the Nature of Transfer, K D Duncan and C J Kelly, Manpower Services Commission, April, 1983.

5. Basic Skills, a report of the Further Education Unit, 1982.

6. Industrial Skills, W Douglas Seymour, Pitman, London, 1966.

7. Improving Skills in Working with People: Interaction Analysis, Damien A Dyer and W John Giles, Training Information Paper 7, Training Services Agency/HMSO, 1974.

8. Training for Versatility, Industrial Training Research Unit Publication TR 12, 1980.

9. See User's Guides, Reference 3 above, page 15 of any Guide.

10. The Discovery Method in Training, DR R M Belbin, Training Information Paper 5, Training Services Agency/HMSO, 1969, second impression, 1973.

11. Developing Learning Skills, Sylvia Downs and Pat Perry, Journal of European Industrial Training, pp 21-26 1984, and

previous publications on this theme.

12. Skill Loss: a Review of the Literature and Recommendations for Research, John Annett, a paper prepared for the Training Services Agency, 1977. See also 'Skill Loss', Manpower Services Commission booklet, 1983.

13. MSC theory on transfer of skills questioned: report in Times Education Supplement, May 1984. (Also discussions with Professor John Annett, who has written a full report on this subject for the Manpower Services Commission.)

14. Institute of Careers Officers pack on OTFs.

15. COIC pack on OTFs.

OCCUPATIONAL TRAINING FAMILIES (OTF'S) AND THEIR 'KEY PURPOSES'		
OTF NO.	OCCUPATIONS	KEY PURPOSE
1	Administrative Clerical, and Office Services	Information processing
2	Agriculture, Horticulture, Forestry and Fisheries	Nurturing and gathering living resources
3	Craft and Design	Creating single or small numbers of objects using hand or power tools
4	Installation, Maintenance and repair	Applying known procedures for making equipment work
5	Technical and Scientific	Applying known principles to making things work or usable
6	Manufacturing and assembly	Transforming metallic and non-metallic materials through shaping, constructing and assembling into products
7	Processing	Intervening into the working of machines when necessary
8	Food preparation and service	Transform and handle edible matter
9	Personal service and sales	Satisfying the needs of individual customers
10	Community and health services	Meeting socially defined needs of the community
11	Transport services	Moving goods and people

APPENDIX 2

An Alternative Approach to Programme Design

It is important to bear in mind the paramount client of YTS - the young person in each case. The design of each YTS programme should be firmly based on a clearly defined clientele (group of young people!). This raises two very important questions. Is the programme such that these youngsters will be able to cope, and to feel challenged? Will the programme motivate these young people to learn eagerly and willingly, and provide them with the ability to go on learning when the year ends?

At the same time the programme should, wherever possible, be designed around a set of related jobs. This will give a clear focus to the programme, and indicate the areas of knowledge, skills and understanding to be covered. It will also provide a framework for the four aims for which there seems to be a growing consensus, that is helping young people to:

- achieve competence in an occupation;
- transfer knowledge and skills to other occupations;
- progress into further education and training;
- cope with the world outside employment.

For the Managing Agent there remains the problem of choosing the cluster of jobs on which to base a programme. This cluster should make sense to the trainees and to the employer, and this means considering jobs with similar content, and jobs which are close together in that the jobholders are interdependent in the work situation.

Having chosen a design base, the methods of training used will largely determine the extent to which the trainee can learn how to learn and how to adapt and use the skills acquired in one context in an alternative work situation. (See text paragraphs 36-48.)

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R J Hartles, Association of Metropolitan Authorities
R Jackson, Trades Union Congress
J Morris, Association of County Councils
E Norris HMI, Department of Education and Science
L Rees, Welsh Joint Education Committee
Rev Canon George Tolley, Manpower Services Commission
C R Walker, Department of Education and Science

Observers
Dr F D Duffin, Department of Education, Northern Ireland
J Howgego, Scottish Education Department
K McWilliams, School Curriculum Development Committee
P C Webb HMI, Welsh Office Education Department

Secretary
Jack Mansell, Chief Officer, Further Education Unit

Objectives

The objects for which **The Further Education Unit (FEU)** is established are to promote, encourage and develop the efficient provision of further education in the United Kingdom and for that purpose:
a) to review and evaluate the range of existing further education curricula and programmes and to identify overlap, duplication, deficiencies and inconsistencies therein;
b) to determine priorities for action to improve the provision of further education and to make recommendations as to how such improvements can be effected;
c) to carry out studies in further education and to support investigations of and experimentation in, and the development of further education curricula and to contribute to and assist in the evaluation of initiatives in further education;
d) to disseminate and publish information and to assist in the dissemination and publication of information about recommendations for and experiments and developments in further education.

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